

Appln No. 09/870,034
Amdt date August 19, 2004
Reply to Office action of May 20, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of displaying a progressive refresh bitstream, the progressive refresh bitstream comprising a plurality of P-pictures, the method comprising the steps of:

decoding a first P-picture containing a first section to generate a decoded first P-picture, the first section comprising one or more I-slices;

zeroing out pixels of the decoded first P-picture, except for ~~the~~ pixels that correspond to the first section, prior to displaying the decoded first P-picture; and

displaying the decoded first P-picture having the pixels that have been zeroed out.

2. (Original) The method of displaying the progressive refresh bitstream according to claim 1, wherein the first section is located at the top of the first P-picture.

3. (Currently Amended) The method of displaying the progressive refresh bitstream according to claim 2, wherein the step of zeroing out pixels of the decoded first P-picture comprises the step of zeroing out all pixels below the pixels that correspond to the first section at the top.

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4. (Original) The method of displaying the progressive refresh bitstream according to claim 1, wherein the first section is located at the bottom of the first P-picture.

5. (Currently Amended) The method of displaying the progressive refresh bitstream according to claim 4, wherein the step of zeroing out pixels of the decoded first P-picture comprises the step of zeroing out all pixels above the pixels that correspond to the first section at the bottom.

6. (Original) The method of displaying a progressive refresh bitstream according to claim 1, wherein the first P-picture is an entry picture.

7. (Currently Amended) The method of displaying a progressive refresh bitstream according to claim 6, wherein decoded P-pictures that are generated by decoding the P-pictures [~~that are decoded~~] before decoding the entry picture are not displayed.

8. (Currently Amended) The method of displaying a progressive refresh bitstream according to claim 1, the method further comprising the steps of:

decoding a second P-picture containing a second section to generate a decoded second P-picture, the second section comprising one or more I-slices;

zeroing out pixels of the decoded second P-picture, except for [~~the~~] pixels that correspond to the second section

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and ~~[the]~~ pixels that correspond to slices at the same relative location in the second P-picture as the first section in the first P-picture, prior to displaying the decoded second P-picture; and

displaying the decoded second P-picture having the pixels that have been zeroed out,

wherein the slices that are at the same relative location in the second P-picture as the first section in the first P-picture are decoded based on the I-slices of the first section.

9. (Original) The method of displaying a progressive refresh bitstream according to claim 8, wherein the first section is located at the top of the first P-picture, and the second section is located below and adjacent to the slices that are at the same relative location in the second P-picture as the first section in the first P-picture.

10. (Currently Amended) The method of displaying a progressive refresh bitstream according to claim 9, wherein the step of zeroing out pixels of the decoded second P-picture comprises the step of zeroing out all pixels below the pixels that correspond to the second section.

11. (Currently Amended) The method of displaying a progressive refresh bitstream according to claim 10, the method further comprising the steps of:

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decoding a third P-picture containing one or more I-slices below slices that are at the same relative position in the third P-picture as the first and second sections, respectively, in the first and second P-pictures, to generate a decoded third P-picture;

zeroing out all pixels below pixels that correspond to the I-slices of the third P-picture prior to displaying the decoded third P-picture; and

displaying the decoded third P-picture having the pixels that have been zeroed out,

wherein the slices above the I-slices of the third P-picture are decoded based on the I-slices of previously decoded P-pictures.

12. (Original) The method of displaying a progressive refresh bitstream according to claim 1, the method further comprising the step of:

determining a refresh depth of the progressive refresh bitstream,

wherein each P-picture of the progressive refresh bitstream includes a number of contiguous I-slices, which number is equal to the refresh depth.

13. (Original) The method of displaying a progressive refresh bitstream according to claim 12, wherein the contiguous I-slices are refreshed I-slices.

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14. (Original) The method of displaying a progressive refresh bitstream according to claim 1, wherein the progressive refresh bitstream includes a HITS bitstream.

15. (Currently Amended) The method of displaying a progressive refresh bitstream according to claim 1, wherein the progressive refresh bitstream further comprises a plurality of B-pictures, wherein pictures generated by decoding the B-pictures are not displayed until at least one P-picture is completely decoded.

16. (Original) The method of displaying a progressive refresh bitstream according to claim 15, wherein the B-pictures are not decoded until at least one P-picture is completely decoded.

17. (Currently Amended) The method of displaying a progressive refresh bitstream according to claim 1, wherein one or more of the P-pictures are ahead of the first P-picture in display order after channel acquisition, wherein decoded P-pictures generated from the P-pictures that are ahead of the first P-picture in display order are not displayed.

18. (Currently Amended) The method of displaying a progressive refresh bitstream according to claim 12, wherein position of the contiguous I-slices move from the top at the first P-picture towards the bottom with each subsequent P-picture in display order until a last slice of one of the P-

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pictures is one of the contiguous I-slices, wherein each decoded P-picture, starting with the decoded first P-picture, is displayed with the pixels below pixels corresponding to the contiguous I-slices zeroed out.

19. (Original) The method of displaying a progressive refresh bitstream according to claim 18, wherein search range for motion vectors for each P-picture is limited to a section of the P-picture that corresponds to sections of previous P-pictures that contain contiguous I-slices.

20. (Original) The method of displaying a progressive refresh bitstream according to claim 18, wherein the P-picture with one of the contiguous I-slices as the last slice is the first one of the P-pictures to be completely decoded.

21. (Currently Amended) The method of displaying a progressive refresh bitstream according to claim 20, wherein all pixels [øf] corresponding to subsequent P-pictures are decoded and displayed after at least one P-picture has been completed decoded.

22. (Currently Amended) An apparatus for decoding and displaying a progressive refresh bitstream, the progressive refresh bitstream comprising a plurality of P-pictures, the apparatus comprising:

a decoder for decoding the P-pictures to generate decoded P-pictures;

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means for zeroing out pixels of the decoded P-pictures; and

a display for displaying the decoded P-pictures,

wherein the decoder decodes a first P-picture containing a first section, the first section comprising one or more I-slices,

wherein the zeroing out means zeroes out pixels of the decoded first P-picture, except for ~~[the]~~ pixels that correspond to the first section, and

wherein the display displays the decoded first P-picture with the pixels, except for the pixels that correspond to the first section, zeroed out.

23. (Original) The apparatus for decoding and displaying a progressive refresh bitstream according to claim 22, wherein the first section is located at the top of the first P-picture.

24. (Currently Amended) The apparatus for decoding and displaying a progressive refresh bitstream according to claim 23, wherein the zeroing out means zeroes out all pixels below the pixels corresponding to the first section at the top.

25. (Original) The apparatus for decoding and displaying a progressive refresh bitstream according to claim 22, wherein the decoder is an MPEG-2 decoder.

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26. (Currently Amended) The apparatus for decoding and displaying a progressive refresh bitstream according to claim 22,

wherein the decoder decodes a second P-picture containing a second section to generate a decoded second P-picture, the second section comprising one or more I-slices,

wherein the slices that are at the same relative location in the second P-picture as the first section in the first P-picture are decoded based on the I-slices of the first section.

wherein the zeroing out means zeroes out pixels of the decoded second P-picture, except for ~~[the]~~ pixels that correspond to the second section and ~~[the]~~ pixels that correspond to slices at the same relative location in the second P-picture as the first section in the first P-picture, prior to displaying the decoded second P-picture, and

wherein the display displays the decoded second P-picture having the pixels that have been zeroed out.

27. (Original) The apparatus for decoding and displaying a progressive refresh bitstream according to claim 26, wherein the first section is located at the top of the first P-picture, and the second section is located below and adjacent to the slices that are at the same relative location in the second P-picture as the first section in the first P-picture.

28. (Currently Amended) The apparatus for decoding and displaying a progressive refresh bitstream according to claim

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27, wherein zeroing out means zeroes out all pixels below the pixels corresponding to the second section.

29. (Currently Amended) The apparatus for decoding and displaying a progressive refresh bitstream according to claim 28,

wherein the decoder decodes a third P-picture containing one or more I-slices below slices that are at the same relative position in the third P-picture as the first and second sections, respectively, in the first and second P-pictures, to generate a decoded third P-picture,

wherein the zeroing out means zeroes out all pixels below pixels corresponding to the I-slices of the third P-picture prior to displaying the decoded third P-picture,

wherein the display displays the decoded third P-picture with all pixels below the pixels that correspond to the I-slices zeroed out, and

wherein the slices above the I-slices of the third P-picture are decoded based on the I-slices of previously decoded P-pictures.

30. (Currently Amended) A system for encoding and decoding a progressive refresh bitstream, the system comprising:

an encoder for encoding video to generate the progressive refresh bitstream, the progressive refresh bitstream comprising a plurality of P-pictures;

a decoder for decoding the P-pictures to generate decoded P-pictures;

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a transmission medium for carrying the progressive refresh bitstream from the encoder to the decoder;

means for zeroing out pixels of the decoded P-pictures; and

a display for displaying the decoded P-pictures,

wherein the decoder decodes a first P-picture containing a first section to generate a decoded first P-picture, the first section comprising one or more I-slices,

wherein the zeroing out means zeroes out pixels of the decoded first P-picture, except for ~~[the]~~ pixels that correspond to the first section, and

wherein the display displays the decoded first P-picture with the pixels, except for the pixels that correspond to the first section, zeroed out.

31. (Original) The system for encoding and decoding a progressive refresh bitstream according to claim 30, wherein the encoder is an MPEG-2 encoder and the decoder is an MPEG-2 decoder.

32. (Currently Amended) The system for encoding and decoding a progressive refresh bitstream according to claim 30,

wherein the decoder decodes a second P-picture containing a second section to generate a decoded second P-picture, the second section comprising one or more I-slices,

wherein the slices that are at the same relative location in the second P-picture as the first section in the

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first P-picture are decoded based on the I-slices of the first section.

wherein the zeroing out means zeroes out pixels of the decoded second P-picture, except for ~~[the]~~ pixels that correspond to the second section and ~~[the]~~ pixels that correspond to slices at the same relative location in the second P-picture as the first section in the first P-picture, prior to displaying the decoded second P-picture, and

wherein the display displays the decoded second P-picture having the pixels that have been zeroed out.

33. (Original) The system for encoding and decoding a progressive refresh bitstream according to claim 32, wherein the first section is located at the top of the first P-picture, and the second section is located below and adjacent to the slices that are at the same relative location in the second P-picture as the first section in the first P-picture.

34. (Currently Amended) The system for encoding and decoding a progressive refresh bitstream according to claim 33, wherein zeroing out means zeroes out all pixels below the pixels that correspond to the second section.

35. (Currently Amended) The system for encoding and decoding a progressive refresh bitstream according to claim 34, wherein the decoder decodes a third P-picture containing one or more I-slices below slices that are at the same relative position in the third P-picture as the first and

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second sections, respectively, in the first and second P-pictures, to generate a decoded third P-picture,

wherein the zeroing out means zeroes out all pixels below pixels that correspond to the I-slices of the third P-picture prior to displaying the decoded third P-picture,

wherein the display displays the decoded third P-picture with all pixels below the pixels that correspond to the I-slices zeroed out, and

wherein the slices above the I-slices of the third P-picture are decoded based on the I-slices of previously decoded P-pictures.